

DORMITORY MANAGEMENT SYSTEM

By

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A project report submitted to the Institute of Information Technology
in partial fulfilment of the requirements for the degree of
Bachelor of Science in Information Technology

Supervised By

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29 March, 2023

DECLARATION

This industrial tour report is submitted to the Institute of Information Technology, Jahangirnagar University, Savar, Dhaka in partial fulfillment of the requirements for having the B.Sc. (Hons.) degree in ICT. This is also needed to certify that the project work is under the 3rd Year 2nd Semester course of the IIT “ICT-3200: Project Work and Course Viva”. So, we are here declaring that this project report has not been submitted elsewhere for the requirement of any kind of degree, diploma or publication.

Ashfaque Rahman Toke
2022

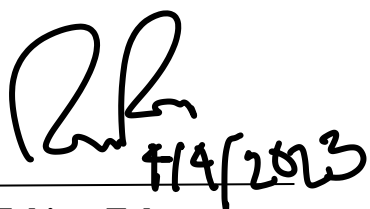
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CERTIFICATE

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A handwritten signature in black ink, appearing to be 'Fahima', with the date '14/2023' written below it.

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DEDICATION

We dedicate this Dormitory Management System project to all the students who strive for a comfortable and efficient living experience in their college dormitories. Our goal was to develop a system that streamlines the management of dormitories, ensuring that students have easy access to essential services and facilities.

We also dedicate this project to the dormitory managers and administrators who work tirelessly to meet the needs of their residents. We hope that this system will help them to manage their duties more effectively, allowing them to provide a better quality of life for their students.

Finally, we would like to dedicate this project to our families and loved ones who have supported us throughout this endeavor. Their encouragement and belief in us have been instrumental in our success.

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ACKNOWLEDGEMENT

First of all we would like to thank the Almighty for giving us the opportunity to complete this work successfully. Our acknowledgement is meant to express our sincere gratitude to all those people who have been associated with this project and have helped us with it and by sharing their experiences and valuable opinions through which we received the required information crucial for our project. We are thankful to our parents for their relentless support. Most importantly we are grateful to our honorable supervisor who took time out to guide us and provide us with all the necessary materials and sufficient knowledge that was the major requirement.

Finally, we convey our regards to our honorable teacher **Professor Fahima Tabassum** Mam for giving us the opportunity to learn the subject particularly practically.

ABSTRACT

This report describes the development of a dormitory management system website designed to improve the efficiency and effectiveness of managing dormitories or student housing. The website addresses the specific challenges faced by dormitory management, such as managing room assignments, maintaining accurate occupancy records, and processing billing and payment information. The proposed system provides user registration and login, room assignment management, and payment processing functionality. The website was implemented using a combination of programming languages and frameworks, and rigorous testing and validation processes were performed to ensure its reliability and effectiveness. The results of the project showed that the website provided significant benefits to both students and administrators, such as reducing paperwork, increasing transparency, and improving communication. The report concludes with potential areas for future development and improvement, such as integrating with other campus management systems or adding new features to the website. Overall, the dormitory management system website has the potential to revolutionize the management of dormitories and student housing, and provide significant benefits to both students and administrators.

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CHAPTER 1

INTRODUCTION

1.1 Introduction

A Dormitory Management System (DMS) is a software application designed to manage and automate the operations of dormitories or hostels. It's a centralized system that simplifies the management tasks of student boarding facilities, making it easier for administrators to manage students, rooms, inventory, and other aspects of running a dormitory.

The DMS typically consists of several modules that cater to different aspects of dormitory management, such as admissions, accommodation, meal plans, payments, maintenance, and security. The system may also include features such as online booking, room assignment, student profiles, attendance tracking, and communication tools, among others.

The primary objective of the Dormitory Management System is to simplify the management of a dormitory and streamline its operations. By automating routine tasks, reducing paperwork, and providing real-time information, the system helps administrators to save time, reduce errors, and enhance the overall experience of students living in the dormitory.

Dormitory Management Systems are used by educational institutions, such as universities, colleges, boarding schools, and hostels, as well as private organizations that provide student housing. With the growing demand for student housing and the increasing complexity of managing dormitories, DMS has become an essential tool for effective dormitory management.

1.2 Objectives

The objectives of the “Dormitory Management System” are:

- To provide a digital management system for JU hall.
- To develop a user-friendly and intuitive website for dormitory management that can be accessed and utilized by both students and administrators.
- To improve the efficiency of managing dormitories by providing automated tools for managing room assignments, occupancy records, and billing and payment processing.
- To reduce paperwork and administrative burden by providing a digital platform for managing dormitories.
- To provide accurate and up-to-date information on dormitory occupancy, room assignments, and billing and payment information.
- To ensure the security and confidentiality of student and administrator data by implementing robust security measures.
- To provide a reliable and scalable system that can accommodate future growth and expansion.
- To improve the overall student experience by providing a streamlined and efficient process for managing dormitories.

1.3 Expected Outcome

The expected outcomes of the “Dormitory Management System” are:

- A complete digital management system for JU Hall.
- Digital means of storing student information.
- Digitalized and Secure communication with authority and student.
- Reduced paperwork and administrative burden through the use of a digital platform for managing dormitories.
- Improved accuracy and timeliness of information related to dormitory occupancy, room assignments, and billing and payment information.
- Improved student experience through a streamlined and efficient process for managing dormitories.
- Potential cost savings through reduction of administrative costs and improved management of dormitories.
- Reduction of human resource and additional cost of JU Hall.

CHAPTER 2 BACKGROUND

2.1 Introduction

Managing dormitories or student housing can be a challenging and complex task. Dormitories have a significant impact on the academic and social experience of students, and are therefore an important aspect of campus life. However, managing dormitories involves a range of administrative tasks, such as managing room assignments, maintaining accurate occupancy records, and processing billing and payment information, that can be time-consuming and difficult to manage efficiently. Furthermore, traditional manual methods of managing dormitories can be cumbersome and error-prone, leading to potential problems such as inaccurate records, lost paperwork, and administrative bottlenecks.

To address these challenges, many universities and colleges are turning to digital solutions such as dormitory management system websites to streamline and automate dormitory management processes. These websites provide a centralized platform for managing dormitories, and can improve the efficiency, accuracy, and transparency of dormitory management. Such websites are typically designed to provide automated tools for managing room assignments, occupancy records, and billing and payment processing. In addition, they may provide features such as online student registration, communication channels between students and administrators, and other functionality that helps to streamline the dormitory management process.

Given the potential benefits of dormitory management system websites, many universities and colleges are exploring ways to implement these systems within their own campuses. The development of a dormitory management system website for a university can improve the overall management of dormitories, reduce administrative costs, and improve the overall student experience. In this project, we aim to develop a dormitory management system website for our university that addresses the specific challenges faced by our dormitory management team and provides an effective and efficient platform for managing dormitories.

2.2 Related Work

2.2.1 Dhaka University Hall

This website provides information about the university's Halls of Residence, including Salimullah Muslim Hall, Dr. Muhammad Shahidullah Hall, Jagannath Hall, and others. The website also provides information about the university's history, leadership, governance framework, and useful links for students and staff. Additionally, there are links to login pages for students and staff, as well as links to the university's tender notices and job postings.

Website Link: [Home :: Dhaka University \(du.ac.bd\)](http://Home :: Dhaka University (du.ac.bd))

The screenshot shows the Dhaka University Hall of Residence website. The header is green with the university logo and navigation links: Home, The University, Academic, Admission, Research, and Offices. The main content area is divided into two columns. The left column is titled 'Halls of Residence' and lists various halls, including A.F. Rahman Hall, Amar Ekushey Hall, Sangatbandhu Sheikh Mujibur Rahman Hall, Bangamata Sheikh Fajlunnessa Mujib Hall, Bangladesh-Kuwait Matree Hall, Bijoy Ekatar Hall, Dr. Muhammad Shahidullah Hall, Dr. Qudrat-E-Khuda Hostel, Fazlul Haq Muslim Hall, Haji Muhammad Mohsin Hall, IBA Hostel, Jagannath Hall, Kabi Jasimuddin Hall, Kabi Sufia Kamal Hall, Mukojodda Zaur Rahman Hall, Nawab Fajlunnessa Chowdhurani Chhetrihabash, Rugsyyah Hall, Salimullah Muslim Hall, Shahid Ashraf Sultana Kamal Hostel, Shamsunnaahar Hall, Sir P.J. Hareng International Hall, Surjo Sen Hall, and Zahurul Haq Hall. The right column is titled 'ঢাকা বিশ্ববিদ্যালয়ের আবাসিক হলসমূহ' (Dhaka University Halls of Residence) and contains a list of halls and their details. The footer contains useful links, quick links, and contact information.

Figure 2.2.1 Home Page of Dhaka University

2.2.2 Shahjalal University of Science & Technology Hall

A simple website is used by Shahjalal University of Science & Technology Hall.

Website Link : [Shahjalal University of Science & Technology \(sust.edu\)](http://sust.edu)

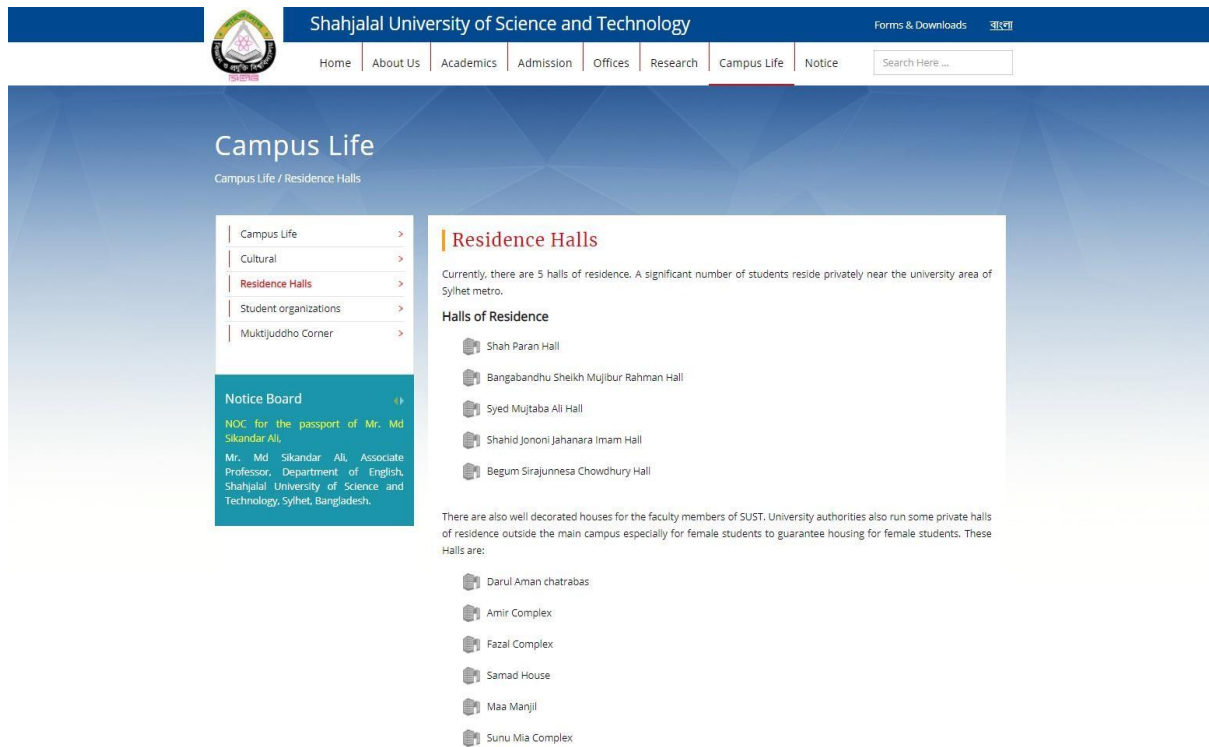


Figure 2.2.2 Home Page of Shahjalal University of Science and Technology

2.2.3 Khulna University of Engineering Technology

Digital world being digital by using information technology like many web-based automation system. A Web-based Dormitory Management System is designed and implemented by Khulna University of Information and Technology.

Khulna University of Engineering & Technology
খুলনা প্রকৌশল ও প্রযুক্তি বিশ্ববিদ্যালয়

Home About KUET Administration Academics Admission Facilities Research Automation Webmail FAQ

..Notice regarding resubmission of consent form for soft loan with select

FAZLUL-HAQUE HALL

Fazlul Haque Hall is the most oldest and historical hall of Khulna University of Engineering and Technology. The name goes after the famous patriot Sher-e-Bangla A.K Fazlul Haque. The residential life of this hall offers a wide variety of services designed to support students in their academic and personal success.

The hall is organized around the vital theme of students' engagement-think volunteering, social entrepreneurship, civic spirit, and the like. In this hall, there are forty one residential rooms and few other common rooms. One of the attractions of this hall is its library cum study room named Sejuti where it has a collection of around 2000 local and foreign books. The library is enriched with novel, story, poetry, autobiography and other types of books.

The hall has also got a common room where students can play many indoor games such as table tennis, chess, carom etc. Besides, indoor games competition on various events is also held in every year which imparts entertainment and refreshment among the students. There is also an arrangement for the students to participate in outdoor games. Last year the hall won a fair play trophy in football tournament showing adequate performance. A beautiful garden with numerous types of flowers resides in front of the hall. Students of this hall are very much enthusiastic and energetic.

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Academics & Admission

- Academic Programs
- Academic Calendar for UG Studies
- Academic Ordinance for UG Studies
- Academic Ordinance for PG Studies
- Academic Collaboration
- Academic System Automation
- Admission for Undergraduate
- Admission for Postgraduate
- Central Library
- Convocation
- Dean's List
- Department
- Faculty
- GISGS Program, KUET
- Institute
- International Student
- Journal of Engineering Science
- Online Journal Access
- Publications
- Scholarships
- Teaching Assistantship & Fellowship

Important Links

- A-Z Index
- Bus Schedule
- Calendar 2020
- Career Opportunities
- Qualification Test for Teaching Post
- Forms & Download
- Gallery
- Guest House
- Holiday List 2020
- National Integrity Strategy Implementation
- Institutional Quality Assurance Cell (IQAC)
- KUET Alumni Association
- NOC List
- Phonebook
- Residence Allocation Information
- Sexual Harassment Complaint Committee
- Tender Notice
- University Grants Commission
- Ministry of Education
- RIT Act 2009

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Contact for Internet Support
Give feedback

Find Us

Khulna University of Engineering & Technology (KUET) is located in Khulna, Bangladesh. The map shows the university's location relative to the city center and surrounding areas.

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Figure 2.2.3 Home Page of Khulna University of Engineering and Technology

CHAPTER 3

SOFTWARE REQUIREMENTS SPECIFICATION

3.1 Requirement Collection and Analysis

3.1.1 Functional System Requirement:

This section gives a functional requirement that are applicable for “Dormitory Management System for JU Hall”.

- User registration and login: The website should have a registration system for both students and administrators to create user accounts, and a login system to authenticate users.
- Room management: The website should provide automated tools for managing room assignments, including the ability to assign rooms based on student preferences, gender, and other criteria.
- Occupancy records management: The website should provide a centralized platform for managing occupancy records, including the ability to view current occupancy, upcoming vacancies, and room change requests.
- Billing and payment processing: The website should provide automated billing and payment processing functionality, including the ability to view and pay bills online, manage payment plans, and track payment history.
- Communication channels: The website should provide communication channels between students and administrators, including messaging functionality, announcements, and alerts.
- Reporting and analytics: The website should provide reporting and analytics functionality to allow administrators to track occupancy rates, room utilization, and other key performance indicators.

These are some modules present in the website.

- Administrator module
- User Module
- Hostile Module
- Registration Module

3.1.2 Non-Functional System Requirements:

- Usability: The website should be easy to use and navigate for both students and administrators, with an intuitive user interface and clear instructions.
- Performance: The website should be fast and responsive, with quick loading times and minimal lag, even during periods of peak usage.
- Reliability: The website should be reliable and available 24/7, with minimal downtime or service disruptions.
- Compatibility: The website should be compatible with a wide range of devices and browsers, including desktops, laptops, tablets, and smartphones.
- Security: The website should be secure, with robust authentication and authorization mechanisms to protect user data and prevent unauthorized access.
- Privacy: The website should respect user privacy, with clear privacy policies and procedures in place to protect user data.
- Scalability: The website should be scalable, able to handle increasing amounts of data and traffic as the number of students and dormitories grows over time.
- Maintainability: The website should be maintainable, with clear and well-documented code that is easy to update and modify as needed.
- Accessibility: The website should be accessible to all users, including those with disabilities, by adhering to web accessibility guidelines and standards.
- Performance monitoring and reporting: The website should have monitoring and reporting mechanisms in place to track performance, identify issues, and resolve them quickly.

3.2 Use Case Modeling

3.2.1 Use Case Diagram

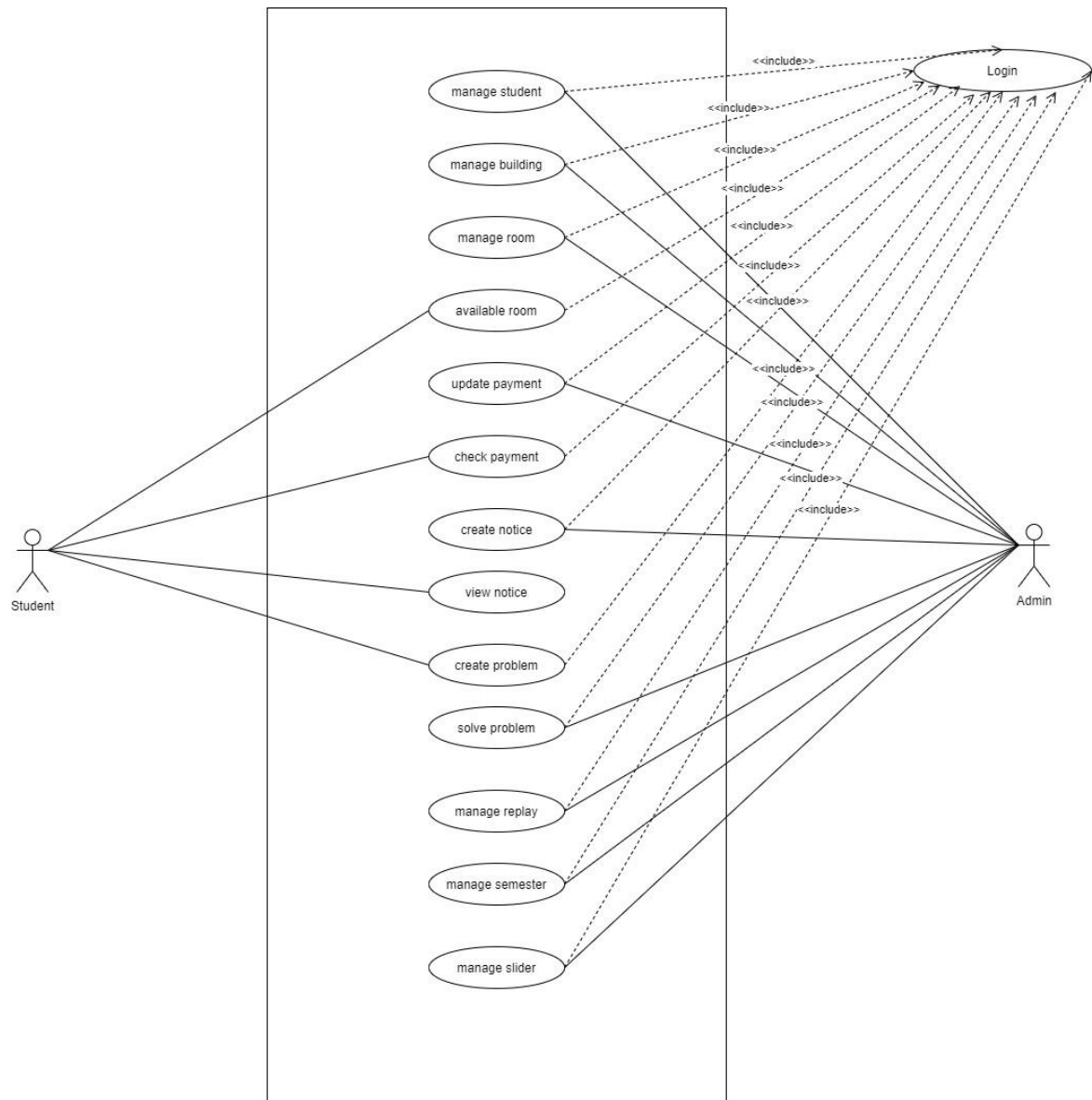


Figure 3.2.1 Use Case Diagram

3.3 Use Case Description

TABLE 3.3.1 Student Manage

Use Case Term	Student Manage
Actors	Admin
Flow of Events	1. Affix to Student 2. Remove Student 3.View Student Details
Substitute Flows	No student found 2. Do not add new student3.Invalid Information
Pre-Condition	Login
Post Condition	Confirm Student, Delete Student

TABLE 3.3.2 Building Manage

Use Case Term	Building Manage
Actors	Admin
Flow of Events	1. Affix to Building 2. Upgrade Building 3. Remove Building
Substitute Flows	Chosen the wrong building Building not found
Pre-Condition	Login
Post Condition	Chosen right building

TABLE 3.3.3 Room Manage

Use Case Term	Room Manage
Actors	Admin
Flow of Events	1. Affix on Room 2. Upgrade Room 3.Remove Room
Substitute Flows	1.Chosen false room 2.Delete incorrect room 3.Invalid Input
Pre-Condition	Login
Post Condition	Select the right room

TABLE 3.3.4 Available Room

Use Case Term	Available Room
Actors	Admin, Student
Flow of Events	1.Check Available Room 2.Upgrade Room
Substitute Flows	Chosen false room 2. Don't updated available room3.Invalid Input's
Pre-Condition	Login
Post Condition	Select Building, Select Room

TABLE 3.3.5 Update Payment

Use Case Term	Update Payment
Actors	Admin
Flow of Events	1.Affix to Payment 2.Upgrade Payment 3.Remove Payment
Substitute Flows	1.Update wrong student payment 2.Don't delete running student payment 3.Invalid Input's
Pre-Condition	Login
Post Condition	Select correct student

TABLE 3.3.6 Check Payment

Use Case Term	Check Payment
Actors	Student
Flow of Events	1. Check current payment 2. Check payment list
Substitute Flows	Incorrect student id Invalid Input's
Pre-Condition	Login
Post Condition	Enter Login Information

TABLE 3.3.7 Create Notice

Use Case Term	Create Notice
Actors	Admin
Flow of Events	1.Affix to Notice 2.Remove Notice
Substitute Flows	Affix wrong notice Invalid Information
Pre-Condition	Login
Post Condition	Enter notice title and description

TABLE 3.3.8 View Notice

Use Case Term	View Notice
Actors	Student
Flow of Events	1.View current Notice 2.View previous Notice
Substitute Flows	Select invalid notice Can't view future notice
Pre-Condition	Login
Post Condition	View notice panel

TABLE 3.3.9 Create Problem

Use Case Term	Create Problem
Actors	Student
Flow of Events	1.Affix to Problem 2.Upgrade Problem 3.Remove Problem
Substitute Flow	Incorrect student id Invalid Information
Pre-Condition	Login
Post Condition	View problem list, view reply of admin

TABLE 3.3.10 Solve Problem

Use Case Term	Solve Problem
Actors	Admin
Flow of Events	1.Reply
Substitute of Flow	Can't ignore problem Invalid reply
Pre-Condition	Login
Post Condition	View problem solving list

TABLE 3.3.11 Apply Manage

Use Case Term	Apply Manage
Actors	Admin
Flow of Events	1.Confirm Apply
Substitute Flows	Don't update previous apply information Invalid Information Input
Pre-Condition	Login
Post-Condition	View Apply list

TABLE 3.3.12 Semester Manage

Use Case Term	Semester Manage
Actors	Admin
Flow of Events	1.Affix to Semester 2.Remove Semester 3.Upgrade Semester
Substitute of Flows	1.Affix false semester 2.search wrong semester 3.Invalid Information
Pre-Condition	Login, Create a new semester
Post Condition	View All Semester

3.4 Database Schema

Admin (A_ID, Password)

Provost (P_ID, Name, Email, Phone)

Staff (St_ID, Name, Phone, Email, Post, Salary, Address)

Student (S_ID, Name, Phone, Email, Registration, Batch, Department)

Room (R_ID, Block, Floor, No of Bed, S_ID)

Dinning (D_ID, Meal Type, Meal Rate, Menu, S_ID, St_ID)

Hall Charge (H_ID, Charge, A_ID, S_ID)

Facility (F_ID, PR_ID, ER_ID, RR_ID, S_ID)

Prayer Room (S_ID, PR_ID)

Entertainment Room (ER_ID, S_ID, TV, Table Tennis)

Reading Room (RR_ID, S_ID)

3.5 Diagram of Entity Relationship

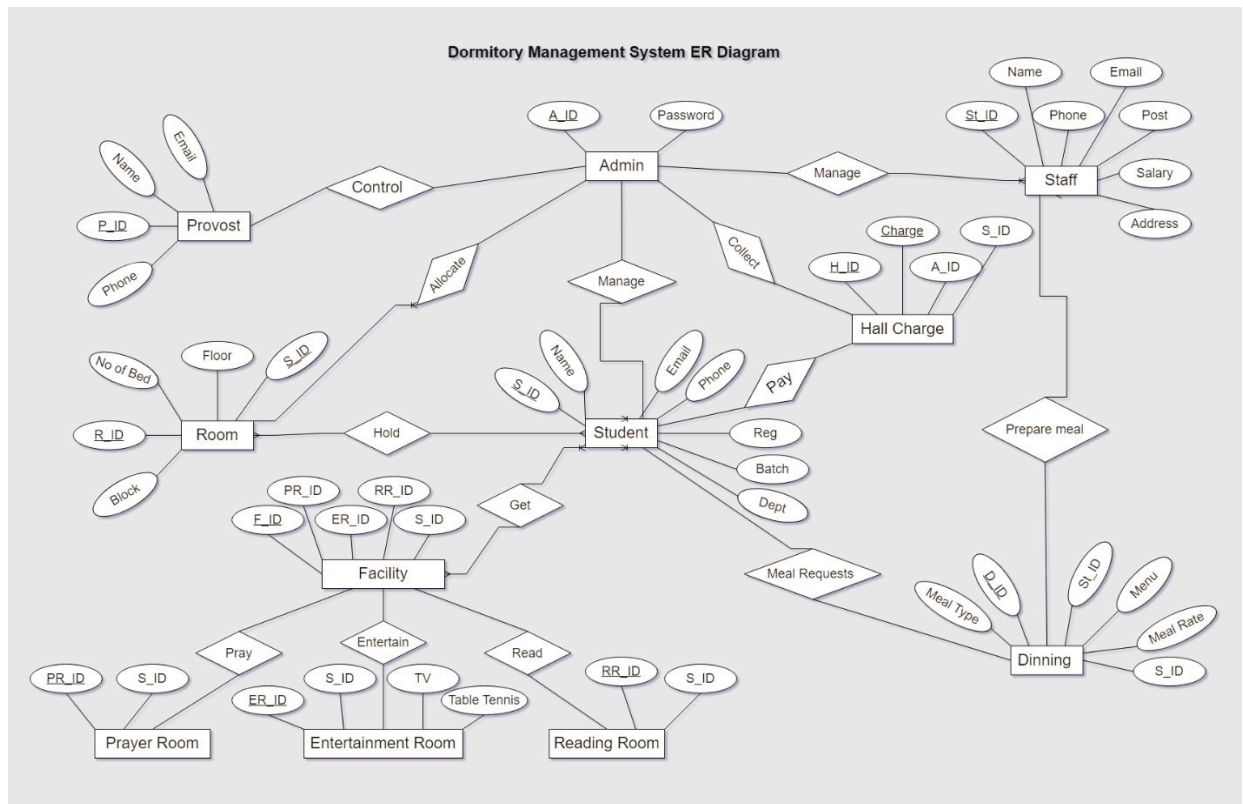


Figure 3.5 Entity Relationship

3.6 Diagram of DFD

3.6.1 Context Level



Figure 3.6.1 DFD Context Level

3.6.2 0 Level Diagram

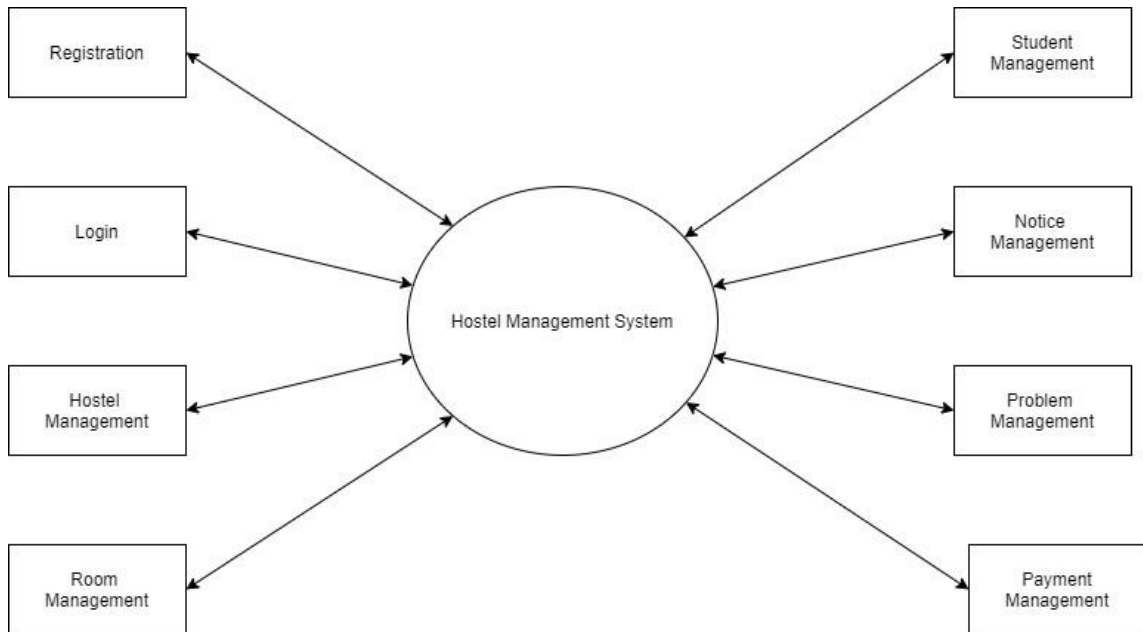


Figure 3.6.2 DFD 0 Level

3.6.3 1 Level Diagram

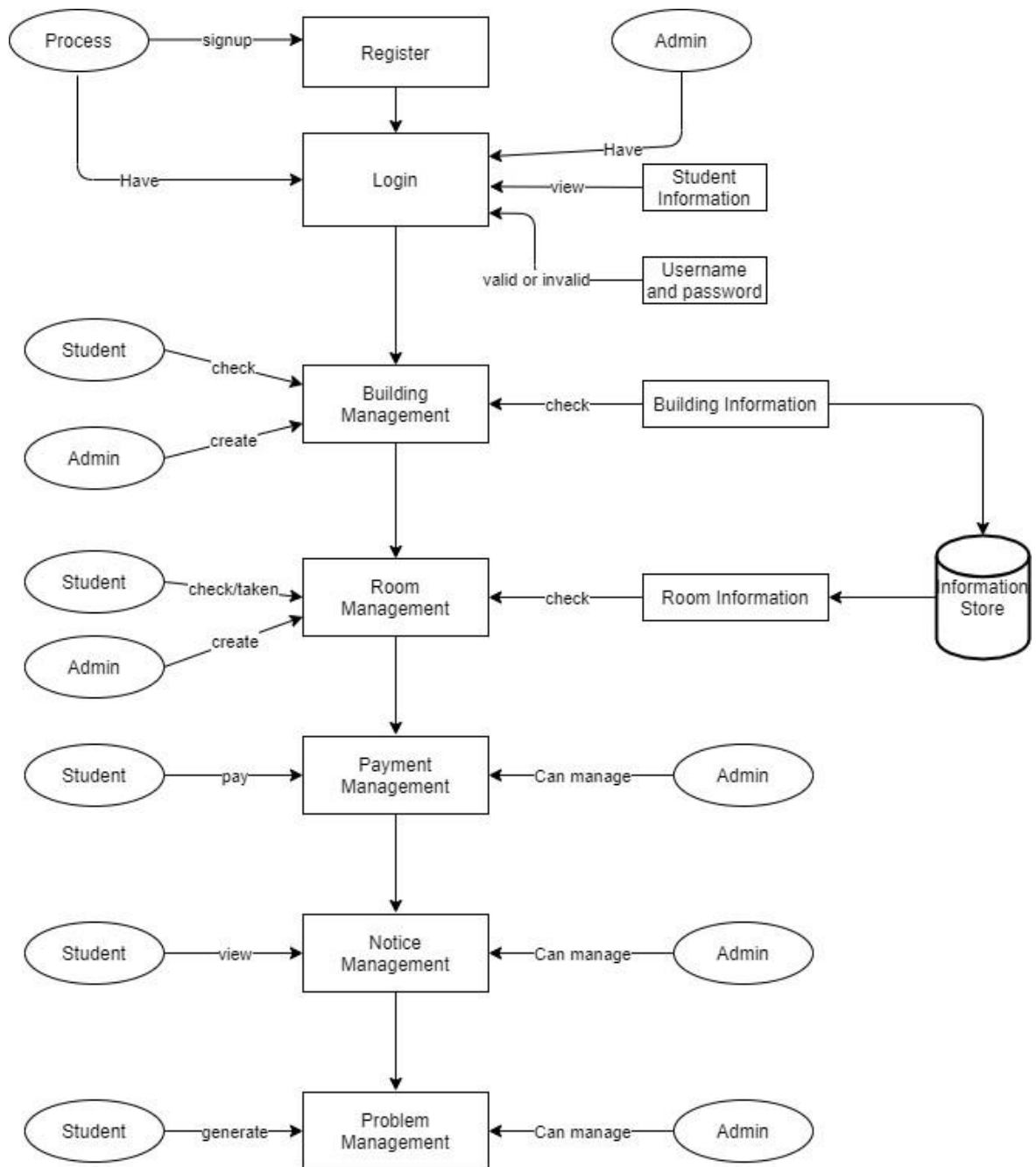


Figure 3.6.3 DFD 1 Level

CHAPTER 4 SYSTEM DESIGN

4.1 Diagram of Activity

4.1.1 Student

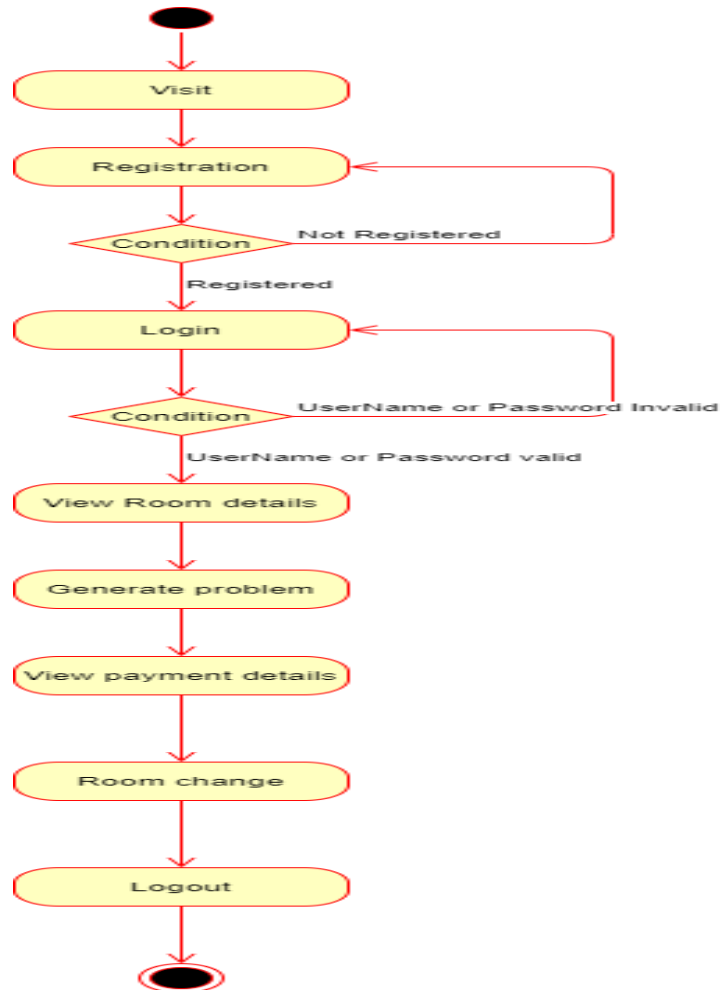


Figure 4.1.1 Student Activity Diagram

4.1.2 Admin

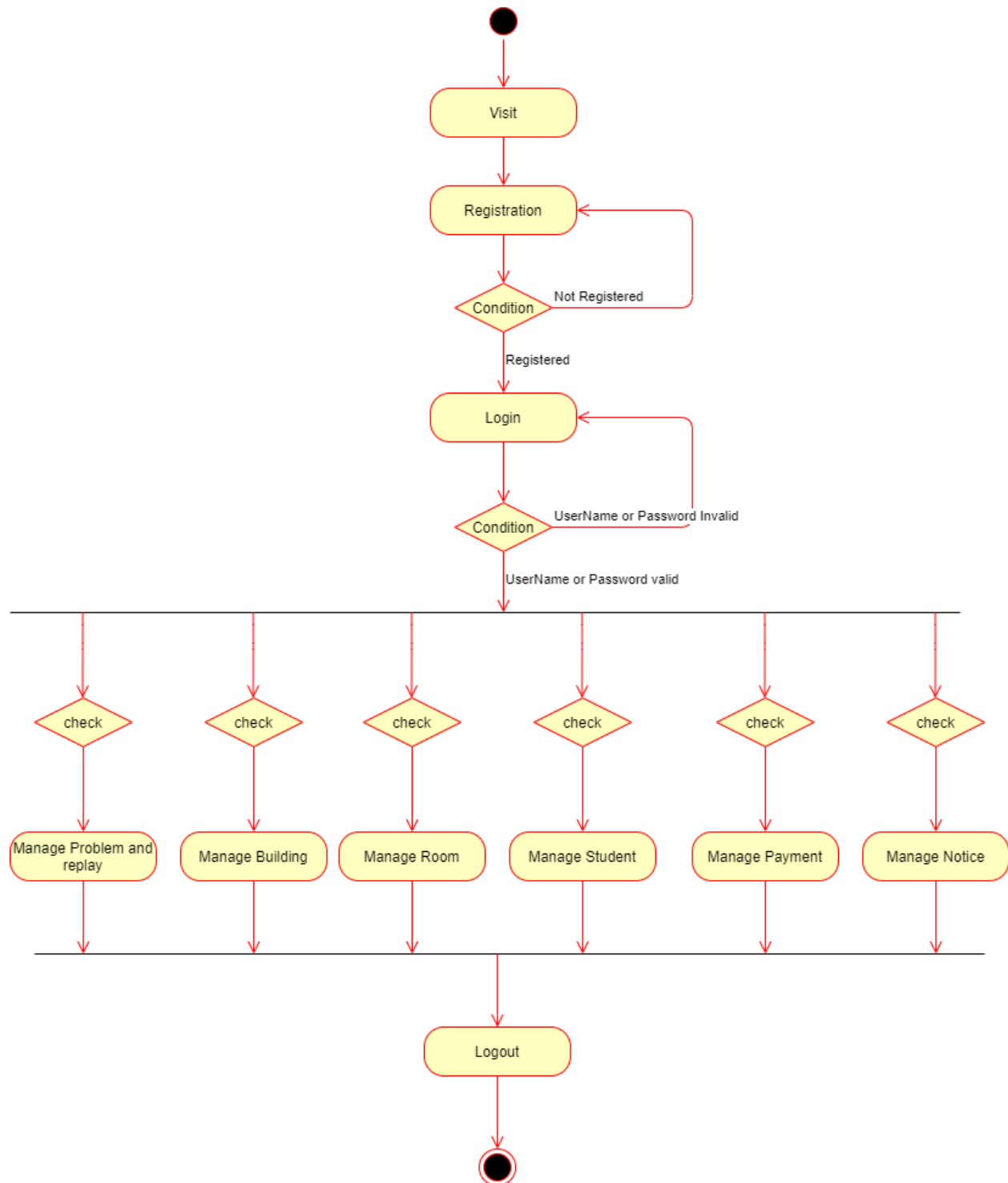


Figure 4.1.2 Admin Activity Diagram

4.2 Sequence Diagram

4.2.1 Login Operation of Admin

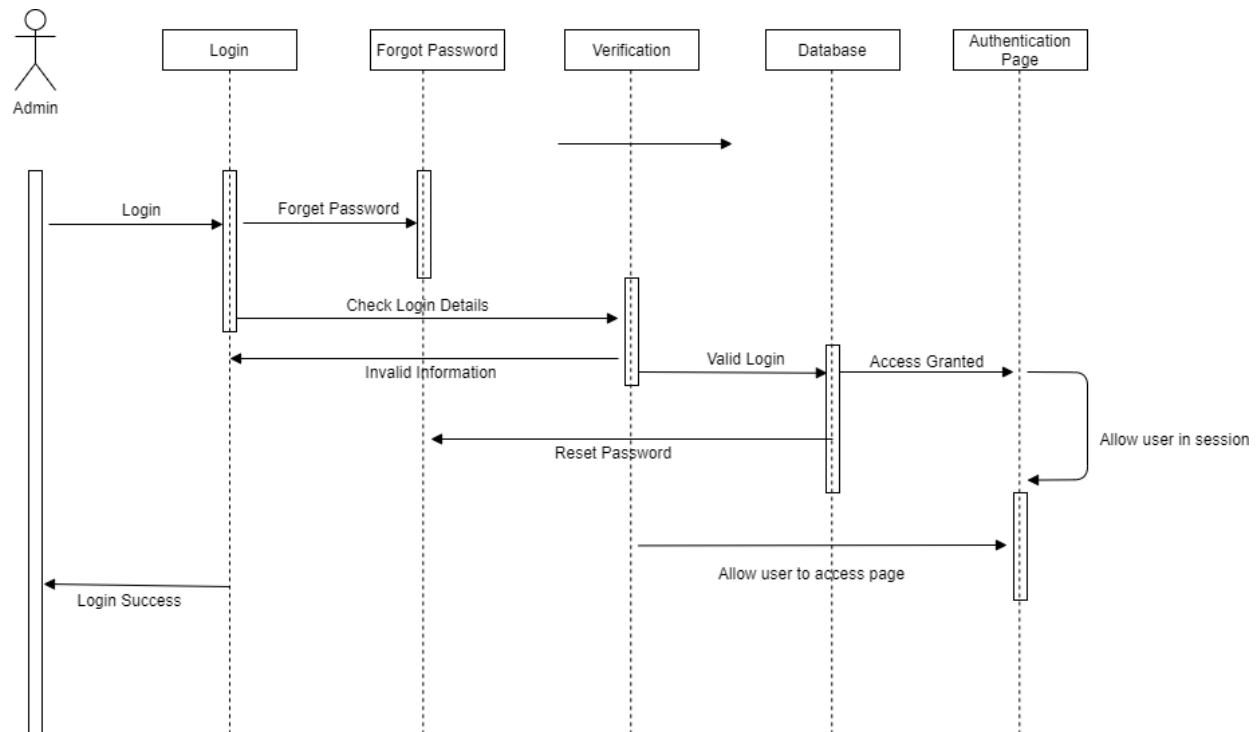


Figure 4.2.1 Login Operation of Admin

4.2.2 Admin Operation Process

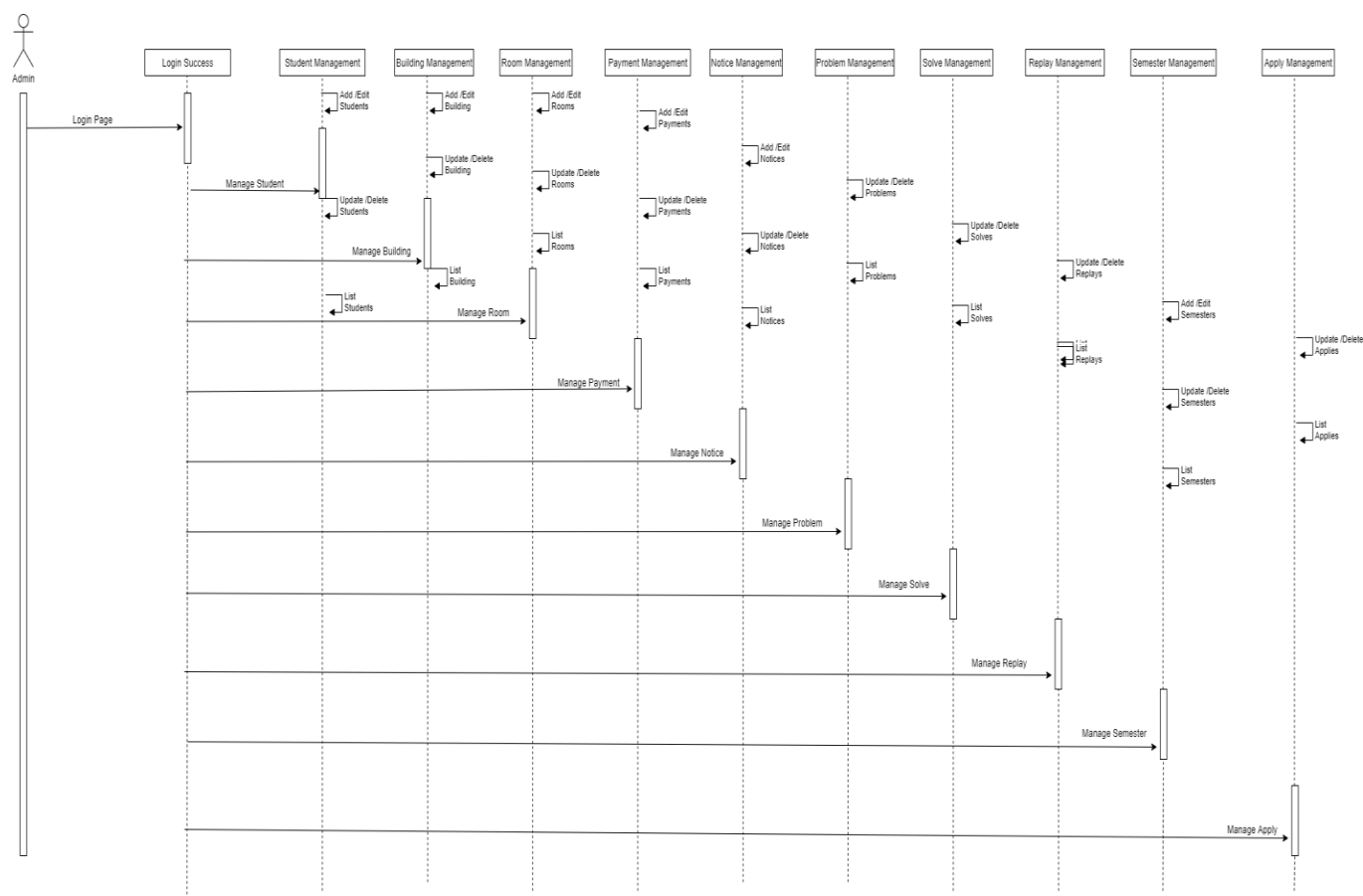


Figure 4.2.2 Admin Operation Process

4.2.3 Student Operation Process

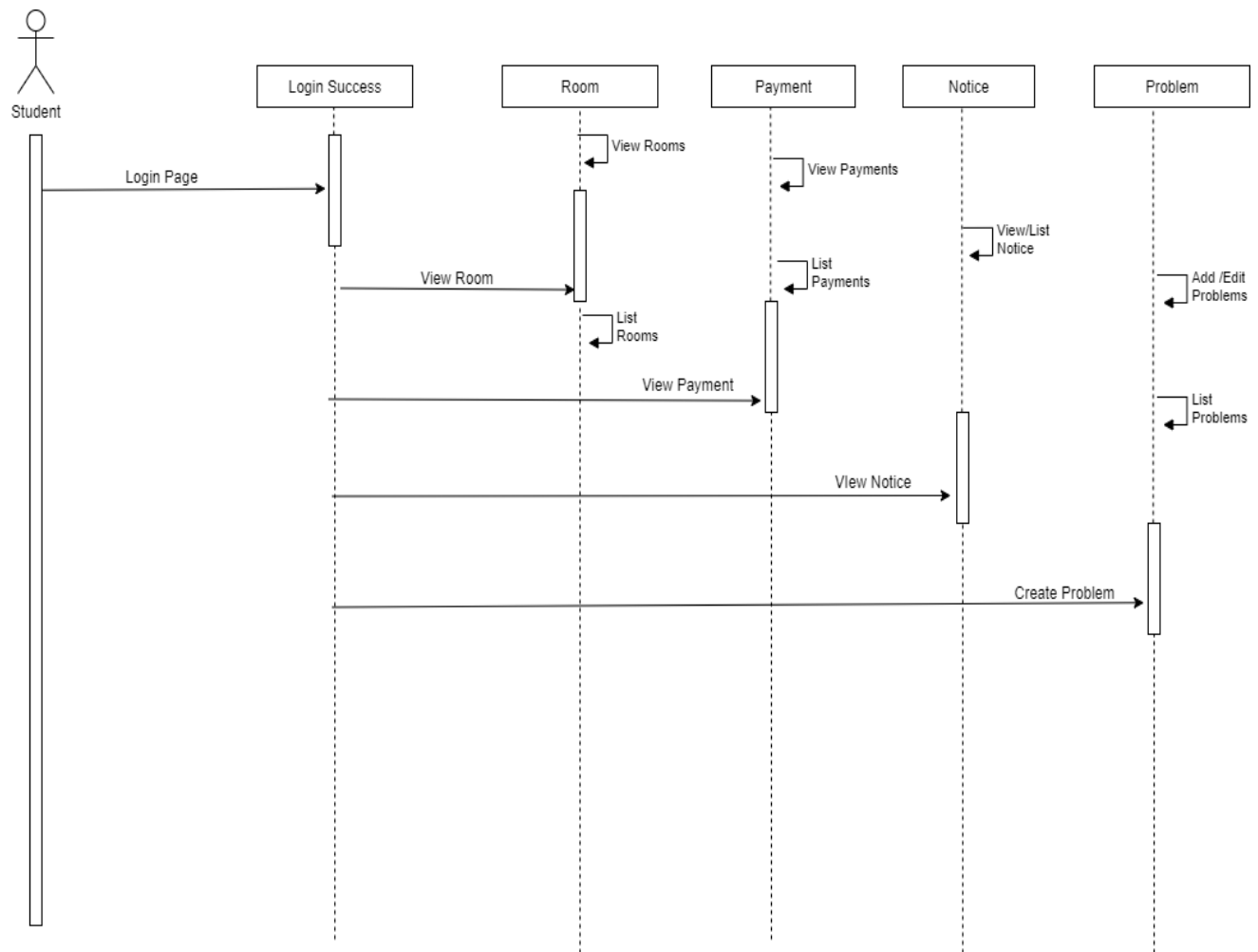


Figure 4.2.3 Student Operation Process

4.3 Front End Design

We use different type of markup language, style sheet, Programming language and some libraries for both front-end and backend.

- HTML 5
- CSS
- Bootstrap4
- JavaScript

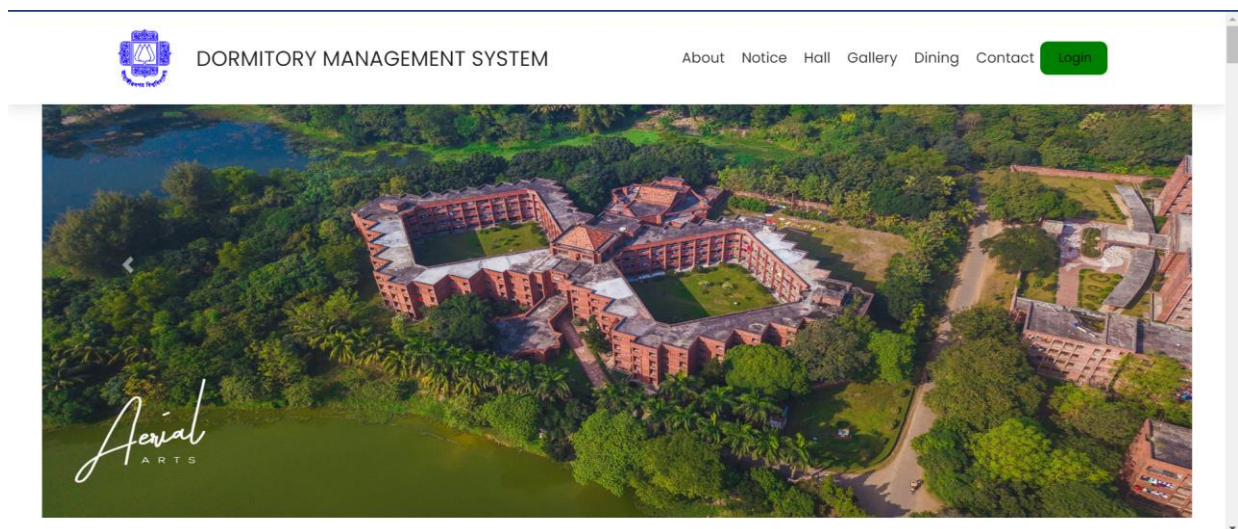


Figure 4.3.1 Home Page



ABOUT



GREETINGS

Hey There And Welcome To The University Dormitory! We're Thrilled To Have You Here As A New Resident. Our Dorm Is More Than Just A Place To Sleep - It's A Community Where You'll Make Lifelong Friends And Memories. We've Got All The Amenities You Need To Make Your Stay Comfortable And Enjoyable, From Study Lounges To Laundry Facilities. And Our Friendly Staff Is Always Here To Help With Any Questions Or Concerns You May Have. So Kick Back, Relax, And Get Ready For An Unforgettable College Experience!

Figure 4.3.2 Our system overview

OUR HALL



Mir Mosharraf Hossain Hall



Shaheed Salam-Barkat Hall



Bangabandhu Sheikh Mujibur Rahman Hall



Al Beruni Hall



Shaheed Rafiq-Jabbar Hall



A F M Kamoluddin Hall



Mowlana Bhashani Hall



Bishwakabi Rabindranath Tagore Hall



Jahanara Imam Hall

Figure 4.3.3 Hall list



NOTICE

Dear University Hall Residents,
As We Approach The Victory Day Of Bangladesh, We Would Like To Invite You All To Join Us For A Special Feast To Commemorate This Historic Occasion. The Feast Will Be Held On December 16th At The Dining Hall, Starting At 7:00 PM.

In Order To Participate In The Feast, You Will Need To Purchase A Coupon For 30 Taka From The Hall Office. This Coupon Will Entitle You To A Plate Of Delicious Bangladeshi Food, Including Biryani, Kebab, And Sweets.

Please Note That Coupons Will Be Available For Purchase Starting From December 10th And Will Be Sold On A First-Come, First-Served Basis. We Encourage You To Get Your Coupons Early To Avoid Disappointment.

If You Have Any Questions Or Concerns, Please Do Not Hesitate To Contact The Hall Office. We Look Forward To Celebrating Victory Day With You All!

Best Regards,

University Hall Office Staff

Figure 4.3.4 Notice

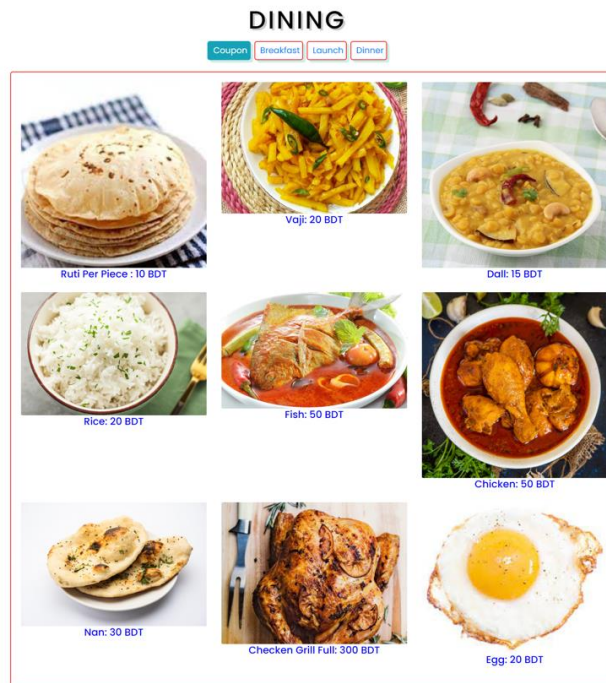


Figure 4.3.5 Dining



Figure 4.3.6 Gallery

CONTACT

Location:
Jahangirnagar University, Savar

Mail:
Juhall@gmail.com

Call:
02224491052

Student ID

Student Name

Room Number

Message

[Send Message](#)

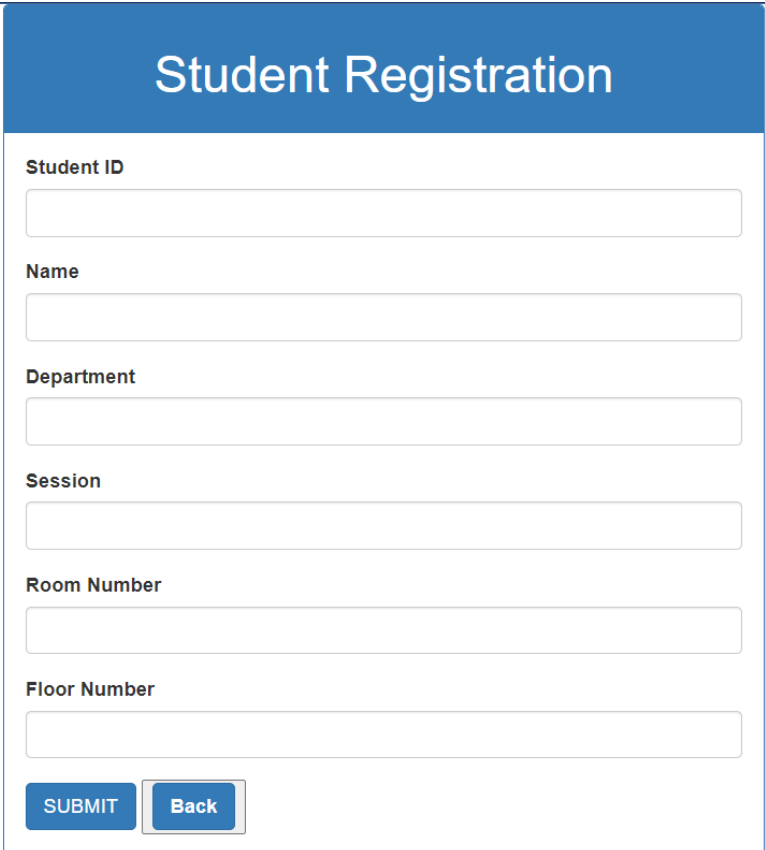
Quick Links	Useful Links	Contact Info	Follow Us
Home Provost Student Gallery Contact	NOC & GO Download Form Result Research Work Office	<p>☎ 1324</p> <p>☎ 02224491045-51</p> <p>✉ Sabhall@gmail.com</p> <p>📍 Jahangirnagar University, Savar, Dhaka-1342, Bangladesh.</p>	<p>📘 Facebook</p> <p>🐦 Twitter</p> <p>📷 Instagram</p> <p>🌐 LinkedIn</p> <p>📌 Pinterest</p>

Figure 4.3.7 Contact

4.4 Back End Design

I used some programming languages and frameworks to complete the back-end design of this website.

- PHP
- Laravel Framework
- MySQL



The image shows a web form titled "Student Registration" with a blue header. Below the header, there are six input fields, each with a label above it: "Student ID", "Name", "Department", "Session", "Room Number", and "Floor Number". At the bottom of the form, there are two buttons: a blue "SUBMIT" button and a grey "Back" button.

Figure 4.4.1 Student Registration Page



Figure 4.4.2 Admin Login Page.

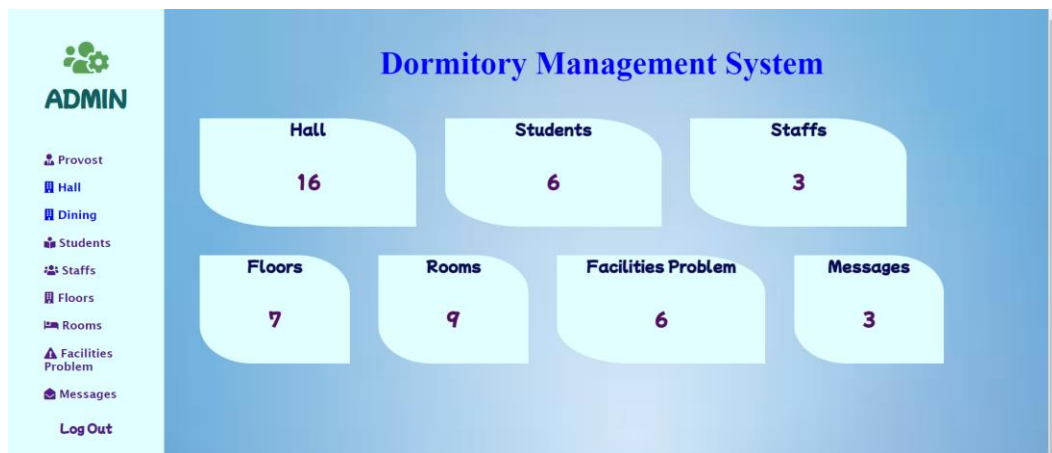


Figure 4.4.3 Admin Dashboard

Student Record							
Student ID	Name	Department	Session	Hall	Room Number	Floor Number	Operations
2023	Md. Shakil Hossain	IIT	2018-2019	RTH	406	4/B	Delete Update
1234	Md. Solaiman Ali	IR	2019-2020	RTH	501	5/B	Delete Update
2024	Mahbubur Rahman	IIT	2018-2019	RTH	104	1/B	Delete Update
2022	Ashfaqur Rahman Tokee	IIT	2018-2019	SRJ	234	2/A	Delete Update
2026	Mahfuz	CSE	2018-2019	AFH	309	3/A	Delete Update
2028	Nahidul Islam	IIT	2018-2019	RTH	104	1/B	Delete Update

INSERT Search Home Page

Figure 4.4.4 Students Record

Faculty Record						
Faculty ID	Phone	Name	Address	Email	Designation	Operations
500001	0169696969	Muzibur Rahman	Islampur Thana More, Islampur, Jamalpur	muzibur@juniv.edu	Professor	Delete
209345	012435647444	MD Akram	Savar,Dhaka	akram@gmail.com		Delete

[INSERT](#)
[Home Page](#)

Figure 4.4.5 Faculty Member Information

FACULTY INFO

Provost ID

30395

Phone

012983954645

Name

Shariful Islam

Address

Narayanganj, Dhaka

Email

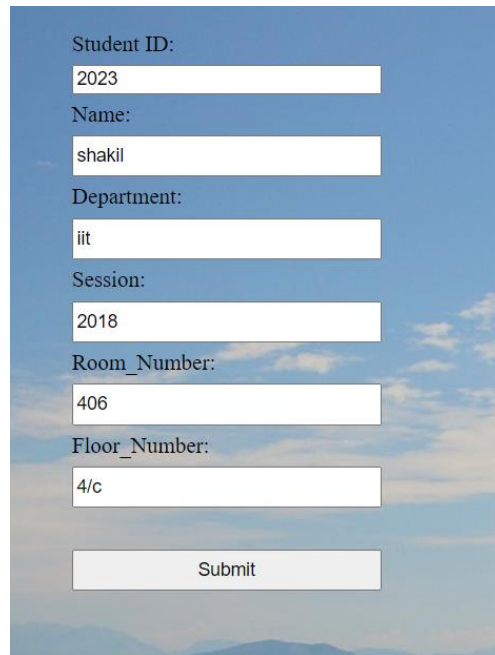
sharif@gmail.com

designation

Lecturer

SUBMIT

Figure 4.4.6 Add Faculty Member



A form titled "Update Student Information" with a blue header and a background image of a sky with clouds. The form contains several input fields for student details and a "Submit" button.

Student ID:
2023

Name:
shakil

Department:
iit

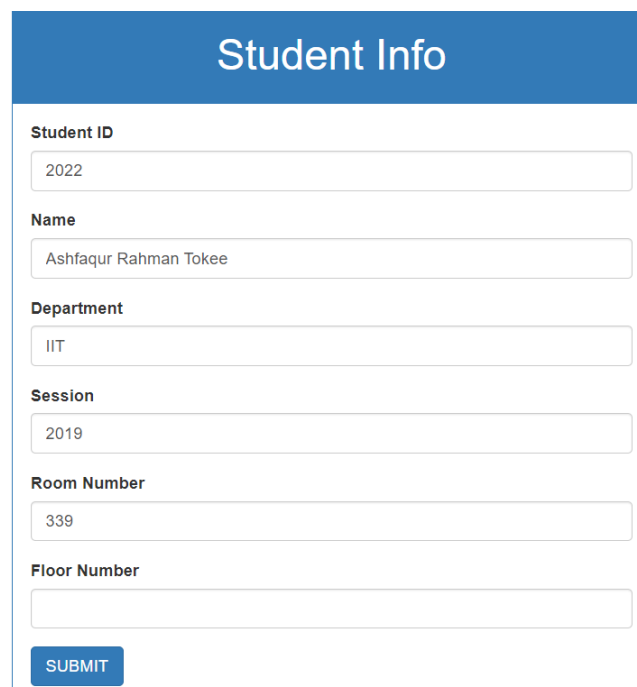
Session:
2018

Room_Number:
406

Floor_Number:
4/c

Submit

Figure 4.4.7 Update Student Information



A form titled "Student Info" with a blue header. The form contains several input fields for student details and a "SUBMIT" button.

Student ID
2022

Name
Ashfaqur Rahman Tokee

Department
IIT

Session
2019

Room Number
339

Floor Number

SUBMIT

Figure 4.4.8 Add Student

Staff Record					
Staff ID	Name	Address	Email	Designation	Operations
4001	motiur	Gerua, Savar	motiur.staff@juniv.edu	Office Assistant	Delete Update
0					Delete Update
123	34t	2343	3434	3434	Delete Update

[INSERT](#)
[Search](#)
[Home Page](#)

Figure 4.4.9 All Staffs

Staff ID:

Name:

Address:

Email:

Designation:

Figure 4.4.10 Update Staff Information

Floor					
Floor Number	Block	Number of Kitchen	Number of Room	Number of Washroom	Operations
1/A	A	4	100	20	Delete Update
2/B	B	6	150	30	Delete Update
1/B	B	43	321	1	Delete Update

[INSERT](#)
[Search](#)
[Home Page](#)

Figure 4.4.11 Floor information

Room				
Room Number	Number of Table	Number of bed	Floor Number	Operations
101	4	2	4/A	Delete Update
102	3	2	4/B	Delete Update

[INSERT](#)
[Search](#)
[Home Page](#)

Figure 4.4.12 List of rooms

Student ID

2023

Student Name

Shakil Hossain

Room Number

406

Message

The Room Is Too Dark.
Need 2 Light Bulbs.

Send Message

Figure 4.4.13 Issuing a complain

Message Record			
Student ID	Name	Room Number	Message
2013	Shakil Ahmed	125/A	problem a fan and light
2090	Amit Azim	125/A	Door problem
2090	Amit Azim	125/A	Door problem
2022	tokee	339	Roome khub thanda

Home Page

Figure 4.4.14 Complain List

Facilities Problem								
Room Number	Damaged Fan Unsolved	Damaged Fan Processing	Damaged Solved	Damaged Light Unsolved	Damaged Light Processing	Damaged Light Solved	Last Modified Date	Operations
101	2	3	4	5	34	4	2022-01-04	Delete Update
234	1	2	3	4	5	6	2022-01-26	Delete Update
321	3	2	5	1	3	2	2022-01-26	Delete Update

[INSERT](#)
[Search By Date](#)
[Search BY Room](#)
[Home Page](#)

Figure 4.4.15 Evaluating Problems

Room Number	Total Unsolved	Total Processing	Total Solved	Modified Date
321	4	5	7	2022-01-26

[Back](#)

Figure 4.4.16 Search Problem by rooms

CHAPTER 5

IMPLEMENTATION AND TESTING

5.1 Database Implementation

TABLE 5.1.1 Database Details of Admin

Chart Name		Admin				
Chart Statement		This is chart container of Admin records				
Area Name	Value Type	Volume	Not Null	PK	FK	Statement
Id	Int	30	√	√		Container contain supreme id (Self Increase)
F_name	Varchar	250	√			Container contain first name of admin
L_name	Varchar	250				Container contain last name of admin
Email	Varchar	250				Container contain email of admin
Contact	Varchar	250				Container contain Contact of admin
Email_verified_at	Timestamp					Container contain email verification date of the admin
Password	Varchar	250				Container contain password of admin
Is_active	Int	1				Container contain active status of admin
Remember_token	varchar	250				Container contain remember token of admin

TABLE 5.1.2 Database Details of Applies

Chart Name		Applies				
Chart Statement		This is chart container of Applies records				
Area Name	Value Type	Volume	Not Null	PK	FK	Statement
Id	Int	30	√	√		Container contain supreme id (Self Increase)
St_application	Varchar	250	√			Container contain student application
St_id	Int	30			√	Container contain student id of apply

TABLE 5.1.3 Database Details of Building

Chart Name		Building				
Chart Statement		This is chart container of Buildings records				
Area Name	Value Type	Volume	Not Null	PK	FK	Statement
Id	Int	30	√	√		Container contain supreme id (Self Increase)
Buiding_name	Varchar	250	√			Container contain building name of building

TABLE 5.1.4 Database Details of Members

Chart Name		Members				
Chart Statement		This is chart container of members record				
Area Name	Value Type	Volume	Not Null	PK	FK	Statement
Id	Int	30	√	√		Container contain supreme id (Self Increment)
Name	Varchar	250	√			Container contain name of member
Email	Varchar	250	√			Container contain email of member
Position	Varchar	250	√			Container contain position of member
Contact	Int	30	√			Container contain contact of member
Image	Varchar	250	√			Container contain image of member

TABLE 5.1.5 Database Details of Notice

Chart Name		Notice				
Chart Statement		This is chart container of notice records				
Area Name	Value Type	Volume	Not Null	PK	FK	Statement
Id	Int	30	√	√		Container contain id (Self Increase)
Title	Varchar	250	√			Container contain notice title of notice
File	Varchar	250	√			Container contain file of notice

TABLE 5.1.6 Database Information Details of Reset

Chart Name		Password Reset				
Chart Statement		This is chart container of password reset records				
Area Name	Value Type	Volume	Not Null	PK	FK	Statement
Email	VARCHAR	250	√			Container contain email of password reset
Token	VARCHAR	250	√			Container contain token of password reset

TABLE 5.1.7 Database Details of Payments

Chart Name		Payments				
Chart Statement		This is chart container of payments records				
Area Name	Value Type	Volume	Not Null	PK	FK	Statement
Id	Int	30	√	√		Container contain supreme id (Self Increase)
St_id	Int	30	√		√	Container contain student id of payments
St_semester	Varchar	250	√			Container contain student semester of payments
Hall_fee	Int	30	√			Container contain hall fee of payments

TABLE 5.1.8 Database Details of Problems

Chart Name		Problems				
Chart Statement		This is chart container of problems record				
Area Name	Value Type	Volume	Not Null	PK	FK	Statement
Id	Int	30	√	√		Container contain supreme id (Self Increase)
P_description	Varchar	250	√			Container contain problem description of problems
St_id	Int	30	√		√	Container contain student id of problems

TABLE 5.1.9 Database Details of Replies

Chart Name		Replies				
Chart Statement		This is chart container of replies records				
Area Name	Value Type	Volume	Not Null	PK	FK	Statement
Id	Int	30	√	√		Container contain supreme id (Self Increase)
St_reply	Varchar	250	√			Container contain student reply of replies
Problem_id	Int	30				Container contain problem id of replies

TABLE 5.1.10 Database Details of Rooms

Chart Name		Rooms				
Chart Statement		This is chart container of rooms records				
Area Name	Value Type	Volume	Not Null	PK	FK	Statement
Id	Int	30	√	√		Container contain supreme id (Self Increase)
Room_num	Varchar	250	√			Container contain room name of rooms
Quantity	Int	30	√			Container contain quantity of rooms
Booked	Int	30	√			Container contain booked status of rooms
Building_id	Int	30	√		√	Container contain building id of rooms

TABLE 5.1.11 Database Details of Semester

Chart Name		Semester				
Chart Statement		This is chart container of semester records				
Area Name	Value Type	Volume	Not Null	PK	FK	Statement
Id	Int	30	√	√		Container contain supreme id (Self Increase)
Semester_name	Varchar	250	√			Container contain semester name of semester

TABLE 5.1.12 Database Details of Slider

Chart Name		Slider				
Chart Statement		This is chart container of slider records				
Area Name	Value Type	Volume	Not Null	PK	FK	Statement
Id	BIG (INT)	30	√	√		Container contain supreme id (Self Increase)
Image	VARCHAR	250	√			Container contain image of slider

TABLE 5.1.13 Database Details of Student

Chart Name		Student				
Chart Statement		This is chart container of student records				
Area Name	Value Type	Volume	Not Null	PK	FK	Statement
St_id	Int	250	√	√		Container supreme id (Self Increase)
St_name	Varchar	250	√			Container contain student name of student
Email	Varchar	250	√			Container contain email of student
Password	Varchar	250	√			Container contain password of student
St_dept	Varchar	250	√			Container contain student department of student
Image	Varchar	250	√			Container contain mage of student
Room_id	Int	30	√		√	Container contain room id of student
Semester_id	Int	30	√		√	Container contain semester id of student

St_contact	Varchar	250	√			Container contain student contact of student
Remember_token	Varchar	250	√			Container contain remember token of student

TABLE 5.1.14 Database Details of User

Chart Name		User				
Chart Statement		This is chart container of user records				
Area Name	Value type	Volume	Not Null	PK	FK	Statement
Id	int	30	√	√		Container supreme id (Self Increase)
F_name	varchar	250	√			Container contain fast name of user
L_name	varchar	250	√			Container contain last name of user
Email	varchar	250	√			Container contain email of user
Contact	varchar	250	√			Container contain contact of user
Address	varchar	250	√			Container contain address of user
Email_verified_at	Timestamp					Container contain email verified time of user
Password	varchar	250	√			Container contain password of user
Remember_token	varchar	250	√			Container contain remember token of user

5.2 Test Case

TABLE 5.2.1 Login Page of Test Case Description

Serial No	Input/Action	Desired Value	Indeed Value	Comment
1	Permit the field empty	The field email and password required	Message “Email and password is required”	Granted
2	Taken ineffective Password	Password is incorrect	Message “Password is incorrect”	Granted
3	Taken ineffective email format	Please enter a valid email	Message “Please enter a valid email”	Granted
4	Taken acceptable user name or email	Accepted Value	Value accepted	Granted

TABLE 5.2.2 Registration Page of Test Case Description

Serial No	Activity	Desired Value	Indeed Value	Comment
1	Permit any field empty	This field is empty	Message “This field is empty”	Granted
2	Taken an ineffective email or already used	This email is invalid or try with another	Message “Enter a valid email or try with another”	Granted
3	Taken an ineffective phone number	Phone number is invalid	Message “Phone number is invalid”	Granted
4	Taken valid data	Accepted Value	Value accepted	Granted

CHAPTER 6

CONCLUSION AND FUTURE WORK

6.1 Future Works

We want our system to be used in our university campus. Then in future if it is convenient to use by the users, we will try to make it as a versatile system. And the problems we have faced, in future we have planned to solve this problem. We have a well-planned idea about it. Some possible future works would include.

- Integration with other campus systems: In the future, you could explore integrating the dormitory management system with other campus systems, such as the student information system or the campus security system, to create a more comprehensive and interconnected platform for managing student life on campus.
- Introduce a payment gateway system like Bikash, Nogod, DBBL.
- Automated room assignment algorithms: To improve the efficiency and accuracy of room assignments, you could develop more advanced algorithms that take into account factors such as student preferences, availability, and compatibility.
- Mobile app development: To make the system more accessible and convenient for users, you could develop a mobile app version of the website that allows students and administrators to access the system on-the-go.
- Smart building integration: In the future, you could explore integrating the dormitory management system with smart building technology, such as sensors and automation systems, to create a more energy-efficient and environmentally-friendly campus.
- Social media integration: To improve communication and engagement with students, you could explore integrating the dormitory management system with social media platforms, such as Facebook and Twitter, to allow for more seamless communication and outreach.

6.2 Conclusion

Dormitory management systems are software tools that streamline the management of dormitories and student housing facilities. These systems typically include features such as room assignment and scheduling, facility maintenance and repairs, rent payment tracking, and communication tools for residents and staff.

Overall, dormitory management systems can greatly benefit both students and staff by increasing efficiency and reducing administrative workload. By automating many of the tasks associated with managing a dormitory, staff members can devote more time to providing support and resources to students.

Additionally, these systems often provide valuable data and analytics that can inform decision-making around facility management and student programming. For example, usage patterns and feedback from residents can help staff optimize resource allocation and improve the overall living experience for students.

In summary, dormitory management systems offer a variety of benefits for both students and staff, including improved efficiency, better communication, and data-driven decision-making. As such, they are increasingly becoming a standard tool for managing student housing facilities.

REFERENCES

- [1] "Dhaka University Hall Management Web Portal" du.ac.bd, 2023. [Online]. Available: http://www.du.ac.bd/home/hall_admin/hall. [Accessed: Jan. 03, 2023]
- [2] "Shahjalal University of Science and Technology Hall" sust.edu, 2023. [Online]. Available: <http://www.sust.edu/campus-life/residence-hall>. [Accessed: Jan. 06, 2023]
- [3] "Khulna University of Engineering and Technology" kueta.ac.bd, 2023. [Online]. Available: <http://www.kueta.ac.bd/index.php/welcome/khajahalldetails>. [Accessed: Feb. 03, 2023]
- [4] "Design and Implementation of a Dormitory Management System Based on Web Services." by Hongbin Wang, Journal of Physics: Conference Series, Volume 1156, Number 4 (2019). [Accessed: Apr. 03, 2023]
- [5] "Development of a Web-Based Student Housing Management System." by Gopal Krishna Shrestha and Deepak Tamang, International Journal of Computer Science and Network Security, Volume 18, Number 5 (2018). [Accessed: Mar. 02, 2023]
- [6] "Design and Implementation of a Smart Dormitory Management System Based on the Internet of Things." by Yanhui Zhu, International Journal of Future Computer and Communication, Volume 8, Number 1 (2019). [Accessed: Apr. 01, 2023]
- [7] "Design and Development of Hostel Management System using Web Technology." by R. Rajeswari and K. R. Sridevi, International Journal of Computer Science and Information Technologies, Volume 6, Number 3 (2015). [Accessed: Feb. 03, 2023]
- [8] "Design and Development of an Automated Dormitory Management System." by A. S. Adegboye and A. T. Adebawale, International Journal of Computer Science and Mobile Computing, Volume 8, Number 7 (2019). [Accessed: Apr. 03, 2023]
- [9] "A Web-Based Dormitory Management System for Higher Education Institutions." by C. L. Bautista and M. F. L. Asistio, International Journal of Computer Applications, Volume 179, Number 45 (2018). [Accessed: Mar. 30, 2023]
- [10] "Development of a Web-Based Hostel Management System for Tertiary Institutions." by G. O. Okegbemi and S. O. Oyebisi, Journal of Engineering and Applied Sciences, Volume 12, Number 1 (2017). [Accessed: Apr. 04, 2023]